Claims

[c1]   *1.* A first network entity of an Alarm Management System (AMS) connected to at least one managed Network Element (NE) and receiving alarm notifications from the NE, the first network entity comprising an Alarm notifications List (AL), wherein when the first network entity rebuilds at least a portion of the AL, the first network entity sends a rebuild notification to at least one second network entity of the AMS indicating it is in a process of rebuilding the at least a portion of the AL, the first network entity further rebuilds the at least a portion of the AL, and once the rebuilt is completed, transmits information from the rebuilt AL to the second network entity.

[c2]   2. The first network entity claimed in claim1, wherein, the first network entity is an agent, the second network entity is a manager, and the AL is an Agent Alarm List (AAL).

[c3]   *3.* The agent claimed in claim 2, wherein the agent rebuilds the at least a portion of the AAL upon detecting or suspecting a corruption of the at least a portion of the AAL.

[c4]   *4.* The agent claimed in claim 2, wherein the rebuild notification sent to the at least one manager of the AMS comprises a Managed Object Instance (MOI) indicative of a Network Element (NE) whose related alarm notifications are being rebuilt by the agent.

[c5]   *5.* The agent claimed in claim 2, wherein the rebuild notification sent to the at least one manager of the AMS is sent through a notification channel connecting the agent and the at least one manager.

[c6]   *6.* The agent claimed in claim 2, wherein the agent transmits alarm notifications from the at least a portion of the rebuilt AAL to the at least one manager without any request received from the at least one manager.

[c7]   *7.* The agent claimed in claim 2, wherein the agent transmits the at least a portion of the rebuilt AAL to the at least one manager through at least one batch of alarm notifications.

[c8]   *8.* The agent claimed in claim 7, wherein the alarm notifications of each batch are marked as belonging to a given batch of alarm notifications.

[c9]   *9.* The agent claimed in claim 2, wherein the rebuild notification further comprises a reason parameter indicative of why the AAL is rebuilt.

[c10]   *10.* The agent claimed in claim 2, wherein the rebuild notification is a NotifyFaultyAlarmList() notification.

[c11]   *11.* The agent claimed in claim 10, wherein the NotifyFaultyAlarmList() notification comprises an Agent Identification representative of an agent whose related AAL is rebuilt.

[c12]   *12.* The agent claimed in claim 2, wherein when the agent transmits information from the rebuilt AAL to the manager, the agent transmits a NotifyAlarmListRebuilt message comprising an AlarmInfoList parameter with at least a portion of the AAL.

[c13]   13. A second network entity of an Alarm Management System (AMS) connected to a first second entity of the AMS and receiving alarm notifications from the first network entity, the second network entity receiving from the first network entity a rebuild notification indicating the first network entity is in a process of rebuilding at least a portion of its Alarm notifications List (AL), and responsive to the receipt of the rebuild notification from the first network entity, the second network entity halting a processing of alarm notifications related to the at least a portion of the AL being rebuilt.

[c14]   14. The second network entity claimed in claim 13, wherein, the first network entity is an agent of the AMS, the second network entity is a manager of the AMS, and the AL is an Agent Alarm List (AAL).

[c15]

    15. The manager claimed in claim 14, wherein following a completion of the process of rebuilding the at least a portion of the AAL by the agent, the manager receives from the agent alarm notifications from the at least a

portion of the AAL.

[c16] *16.* The manager claimed in claim 14, wherein the agent communicates with the manager through a notification channel connecting the agent and the manager.

[c17] *17.* The manager claimed in claim 14, wherein the manager receives from the agent alarm notifications from the at a portion of the AAL without any request sent from the manager to the agent.

[c18] *18.* The manager claimed in claim 14, wherein responsive to the receipt of the rebuild notification from the agent, the manager starts purging at least a portion of a Manager Alarm List (MAL) comprising alarm notifications corresponding to the at least a portion of the AAL being rebuilt by the agent.

[c19] *19.* The manager claimed in claim 18, wherein the rebuild notification received by the manager comprises a Managed Object Instance (MOI) indicative of a Network Element (NE) whose related alarm notifications are being rebuilt by the agent.

[c20] 20. The manager claimed in claim 14 further comprising a Manager Alarm List (MAL), wherein upon receipt of the alarm notifications from the at least a portion of the AAL, the manager restores at least a portion of the MAL using the alarm notifications from the at least a portion of the AAL.

[c21] 21. The manager claimed in claim 14, wherein the rebuild notification further comprises a reason parameter indicative of why the AAL is rebuilt.

[c22] *22.* The manager claimed in claim 14, wherein the rebuild notification is a NotifyFaultyAlarmList() notification.

[c23] *23.* The manager claimed in claim 14, wherein the NotifyFaultyAlarmList() notification comprises an Agent Identification representative of an agent whose related AAL is rebuilt.

[c24]

24. The manager claimed in claim 15, wherein the manager receives from

the agent alarm notifications from the at least a portion of the AAL through a NotifyAlarmListRebuilt message sent from the agent and comprising an AlarmInfoList parameter with at least a portion of the AAL.

[c25]   *25.* A method of synchronizing an Alarm notifications List (AL) of a first network entity of an Alarm Management System (AMS) and an Alarm notification List (MAL) of a second network entity, the method comprising the steps of:

upon deciding a rebuild of at least a portion of the AL, sending from the first network entity to the second network entity a rebuild notification indicative of an ongoing rebuild process of the at least a portion of the AL;

upon receipt of the rebuild notification by the second network entity, the second network entity halting a processing involving alarm notifications related to the at least a portion of the AAL;

the first network entity completing the rebuild of the at least a portion of the AL, and

following a completion of the rebuild process, the first network entity sending to the second network entity alarm notifications from the at least a portion of the AL that was rebuilt.

[c26]   *26.* The method claimed in claim 25, wherein the fist network entity is an agent of the AMS, the Alarm notification List (AAL) of the first network entity is an Agent Alarm List, the second network entity is a manager of the AMS, and the Alarm notification List of the second network entity is a Manager Alarm List (MAL).

[c27]   *27.* The method claimed in claim 26, wherein the agent decides to rebuild the at least a portion of the AAL upon detecting or suspecting a corruption of a data of the AAL.

[c28]   *28.* The method claimed in claim 26, wherein the rebuilt notification comprises a Managed Object Instance (MOI) indicative of a Network Element (NE) of a managed network managed by the AMS, whose related alarm notifications in the AAL are suspected to be corrupted.

[c29]　　　*29.* The method of claim 26, wherein at least one of the rebuilt notification and the alarm notifications from the at least a portion of the AAL that was rebuilt, is sent from the agent to the manager through a notification channel connecting the agent and the manager.

[c30]　　　*30.* The method of claim 26, wherein upon receipt of the rebuild notification, the manager also starts purging at least a portion of its MAL.

[c31]　　　*31.* The method of claim 30, wherein upon receipt of the rebuild notification by the manager, the manager also starts purging the at least a portion of the MAL comprising alarm notifications related to the MOI.

[c32]　　　*32.* The method of claim 26, wherein the step of sending to the manager alarm notifications from the rebuilt AAL comprises sending the alarm notifications using at least a batch of alarm notifications.

[c33]　　　*33.* The method of claim 32, wherein the alarm notifications of each batch are marked as relating to that batch.

[c34]　　　*34.* The method of claim 26, wherein the step of sending to the manager alarm notifications from the at least a portion of the AAL that was rebuilt is performed without any request being first sent from the manager to the agent.

[c35]　　　*35.* The method claimed in claim 26, further comprising the step of:
receiving at the manager the alarm notifications from the at least a portion of the AAL that was rebuilt;
restoring at the manager at least a portion of the MAL using the alarm notifications from the at least a portion of the AAL that was rebuilt.

[c36]　　　*36.* The method claimed in claim 35, further comprising the step of:
the manager resuming a normal processing following the step of restoring the at least a portion of the MAL.

[c37]　　　*37.* The method claimed in claim 26, wherein the rebuild notification further comprises a reason parameter indicative of why the AAL is rebuilt.

[c38]   38. The method claimed in claim 26, wherein the rebuild notification is a NotifyFaultyAlarmList() notification.

[c39]   39. The method claimed in claim 26, wherein the step of sending to the manager alarm notifications from the at least a portion of the AAL that was rebuilt comprises sending from the agent a NotifyAlarmListRebuilt message comprising an AlarmInfoList parameter with the at least a portion of the AAL that was rebuilt.

[c40]   40. An Alarm Management System (AMS) comprising:
an first network entity having an Alarm notifications List (AL) for storing alarm notifications received from Network Elements (NEs) of a managed network connected to the first network entity; and
a second network entity connected to the first network entity and having an Alarm notifications List (MAL) for storing alarm notifications received from the first network entity;
wherein upon beginning a rebuild of at least a portion of the AL, the first network entity sends to the second network entity a rebuild notification indicative of an ongoing rebuild process of the at least a portion of the AL, upon receipt of the rebuild notification the second network entity halts a processing involving at least a portion of the MAL comprising alarm notifications related to the at least a portion of the AL and, once the first network entity completes the rebuild, it sends to the second network entity alarm notifications from the rebuilt portion of the AL.

[c41]   41. The system claimed in claim 40, wherein the rebuilt notification comprises a Managed Object Instance (MOI) indicative of at least one NE whose related event notifications in the AL are suspected to be corrupted.

[c42]   42. The system claimed in claim 40, wherein the fist network entity is an agent of the AMS, the Alarm notification List (AL) of the first network entity is an Agent Alarm List (AAL), the second network entity is a manager of the AMS, and the Alarm notification List of the second network entity is a Manager Alarm List (MAL).

[c43]   43. The system of claim 42, further comprising a notification channel
          between the agent and the manager, wherein at least one of the rebuilt
          notification and the alarm notifications from the rebuilt portion of the AAL is
          sent from the agent to the manager through a notification channel
          connecting the agent and the manager.

[c44]   44. The system of claim 42, wherein upon receipt of the rebuild notification
          by the manager, the manager also starts purging at least a portion of its
          MAL.

[c45]   45. The system of claim 44, wherein the at least a portion of the MAL
          comprises alarm notifications related to the MOI.

[c46]   46. The system of claim 42, wherein the agent sends to the manager alarm
          notifications from the rebuilt MAL using at least a batch of alarm
          notifications.

[c47]   47. The system of claim 46, wherein the alarm notifications of each batch are
          marked as belonging to that batch of alarm notifications.

[c48]   48. The system of claim 42, wherein the agent sends to the manager alarm
          notifications from the at least a portion of the rebuilt AAL without any
          request being sent from the manager to the agent.

[c49]   49. The system claimed in claim 42, wherein upon receiving the alarm
          notifications from the at least a portion of the AAL that was rebuilt, the
          manager restores at least a portion of the MAL using the alarm notifications
          from the at least a portion of the AAL that was rebuilt.

[c50]   50. The system claimed in claim 49, wherein the manager further resumes a
          normal processing following the restoring of the at least a portion of the
          MAL.

[c51]   51. The system claimed in claim 42, wherein the rebuild notification further
          comprises a reason parameter indicative of why the AAL is rebuilt.

[c52]   *52.* The system claimed in claim 42, wherein the rebuild notification is a NotifyFaultyAlarmList() notification.

[c53]   *53.* The system claimed in claim 42, wherein when the agent sends to the manager alarm notifications from the rebuilt portion of the AAL, the agent sends a NotifyAlarmListRebuilt message comprising an AlarmInfoList parameter with the at least a portion of the AAL that was rebuilt.